

REMARKS

Applicants appreciate the Examiner's thorough consideration provided the present application. Claims 1, 4-7 and 10-15 are now present in the application. Claims 1, 5, 7, 11, 14 and 15 have been amended. Claims 1 and 7 are independent. Reconsideration of this application, as amended, is respectfully requested.

Claim Objections

Claims 14 and 15 have been objected to due to the presence of minor informalities. In view of the foregoing amendments, in which the Examiner's helpful suggestions have been followed, it is respectfully submitted that this objection has been addressed. Reconsideration and withdrawal of this objection are respectfully requested.

Claim Rejections Under 35 U.S.C. §112

Claims 5 and 11 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. This rejection is respectfully traversed.

In view of the foregoing amendments, it is respectfully submitted that this rejection has been addressed. Accordingly, all pending claims are now definite and clear. Reconsideration and withdrawal of the rejection under 35 U.S.C. § 112, second paragraph, are therefore respectfully requested.

Claim Rejections Under 35 U.S.C. § 103

Claims 1, 4-7 and 10-15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Abe, U.S. Patent No. 5,473,705. This rejection is respectfully traversed.

In light of the foregoing amendments to the claims, Applicants respectfully submit that this rejection has been obviated and/or rendered moot. As the Examiner will note, independent claims 1 and 7 have been amended.

Independent claim 1 now recites “an extracting step for extracting a text including one or more keywords from a database through extracting means”, “a text generation step for generating an optimum text based on the extracted text by text generation means” and “parser means morphologically analyzes and parses the extracted text to obtain a dependency structure of the text by determining the probability of dependency of the entire text by applying a statistical technique using a dependency model, thereby generating a text having a maximum probability as the optimum text.”

Independent claim 7 now recites “extracting means for extracting a text including one or more keywords from a database”, “text generation means for generating an optimum text by using the extracted text” and “parser means morphologically analyzes and parses the extracted text to obtain a dependency structure of the text by determining the probability of dependency of the entire text by applying a statistical technique using a dependency model, thereby generating a text having a maximum probability as the optimum text.”

Applicants respectfully submit that the above combinations of steps and elements as set forth in amended independent claims 1 and 7 are not disclosed nor suggested by the reference relied on by the Examiner.

The claimed invention has the features that the text including one or more keywords is extracted from a database in an extracting step, and that an optimum text is generated by using the extracted text, wherein the parser means morphologically analyzes and parses the extracted text to obtain a dependency structure of the text by determining the probability of dependency of the entire text by applying a statistical technique using a dependency model, thereby generating a text having a maximum probability as an optimum text.

In the specification, Japanese examples are written using English alphabets. For the illustration purpose, the following examples are explained with English translation and Chinese/Japanese characters.

When “彼女(She)”, “公園 (park)”, and “行った (went)” are input as keywords in an input step, texts of “彼女 (kanojo) は (wa), 公園 (koen) へ (e) 行った (itta) <She went to a park>”, “彼女 (kanojo) の (no) 公園 (koen) へ (e) 行った (itta) <... went to her park>”, etc. are extracted in an extracting steps.

Subsequently, an optimum text of “彼女 (kanojo) は (wa), 公園 (koen) へ (e) 行った (itta) <She went to a park>” is generated in a text generation steps based on a result of the probability of dependency of the entire text. See page 3, lines 7-19 of the specification.

In the outstanding office action, the Examiner alleged that "an extracting step for extracting, from a database, a text or a phrase related to the keyword" is described in col. 5, lines 13-18 and Figs. 4 and 5 of Abe because dependence relationships are analyzed and extracted using the analysis table, word dictionary, analysis stack area, and case dictionary. However, no texts related to the keyword are extracted in the Abe reference.

In particular, in Abe, a word train is recognized from the input sign data, and part of speech and meaning of the word in the train word are set in an analysis table as referring a word dictionary (see Figs. 2, 4 and 5). Then, a dependency structure between the words is determined by dependency analysis and the result is input into analysis table (See Fig. 8). The words in the table are set on analysis stack area. Then the part of speech of each word is checked. If there is a verb in the analysis stack, the case dictionary is referred to with respect to the verb to determine the cases of depending words (see Fig 11). Based on one-sentence/one-case principle, each case of the word in the analysis stack area is determined (see Fig. 8). While considering the word pairs having a dependence relationship determined by the dependence analysis program, omitted words are supplemented by using the omission/supplement rule or the like. Finally, the supplement results stored in the analysis table at the result filed are connected together to generate and store a translated spoken-language sentence (see Fig. 6).

To further explain the differences between the present invention and the Abe reference, the following example is illustrated.

In Abe, given a train of words in a sing language “彼女(She)”, “公園 (park)”, and “行った (went)”, the dependence analysis finds that the words “彼女(She)” and “公園 (park)” are the subjective case and the place case of the verb “行った (went)”, respectively. Next, the omission/supplement rule supplements the postpositions “は” and “へ” after the words “彼女”(She)” and “公園 (park), respectively. As a result, a spoken-language sentence “彼女 (kanojo) は (wa), 公園 (koen) へ (e) 行った (itta) <She went to a park>” can be generated.

Table showing analysis results of the words in Abe

| Word | Part of speech | Meaning | Depended <i>word</i> | Dependable <i>case</i> | Supplement result |
|---------------|----------------------------------|-----------|-------------------------|---------------------------|----------------------|
| 彼女 (She) | Pronoun | Person | 行った (went) | Subjective case | 彼女は (She) |
| 公園 (park) | Proper Noun | Place | 行った (went) | Place case | 公園へ (to park) |
| 行った (went) | Four-step Conjugative verb | Operation | — | — | 行った (went) |

As shown above, Abe never extracts any texts including one or more keywords from a database, nor performs a text generation step to generate an optimum text by using the extracted text. The sentence “彼女は公園へ行った<She went to a park>” in Abe is simply a spoken-language sentence, not a text extracted from a database in order to generate an optimum text.

While only one spoken-language sentence of “彼女は公園へ行った<She went to a park>” is generated by a case analysis based on a case of verb “行った(went)” in Abe, there is a possibility to generate another spoken-language sentence of “彼女(kanojo)の(no)公園(koen)へ(e)行った(ittta)<.,went to her park>” similar to the present invention because the words “彼女(She)” can be a possessive case in Japanese. Even if the text of “彼女の公園へ行った<...went to her park>” were described in Abe, this sentence is never generated by using any texts because no texts related to a keyword are extracted in Abe.

The examiner also alleged that although Abe fails to explicitly state text having “maximum probability”, it does mention the use of rules and a way to calculate the best expression or text. Applicants respectfully disagree.

In the present invention, by morphologically analyzing and parsing the extracted text, dependency structure of the text can be obtained by determining the probability of dependency of the entire text, thereby generating a text having a maximum probability as an optimum text. Therefore, with the evaluator (12c) functioning, a plurality of texts considered particularly optimum are ordered with rank from among the candidates formed as the natural texts (see page 19, lines 7-9). If a small number of phrases in an entire sentence is unnatural in the consistency between a prior phrase and a subsequent phrase, the results are returned back to the process of the parser (12a) or the constructor (12b) so that another candidate is built to output a natural text in the entire sentence (see page 19, lines 24-25; page 20, lines 1-5). In case of lack of keywords, a plurality of texts are presented, and the patient simply selects one from the texts, such an application is sufficiently advantageous (see page 22, lines 18-21). Furthermore, a combination of insertion techniques may provide another system that automatically creates a new story (see page 23, lines 15-16), and a sentence with a lot of redundancy, possibly written by a unskilled writer, maybe corrected, and may be changed into a smoother sentence with phrases added (see page 24, lines 11-13).

However, in Abe, the most probable one is selected or a plurality of candidates are used at the later processes when the dependence relationship is ambiguous and cannot be analyzed definitely (see col. 7, line 65 to col. 8, line 1). Abe neither teaches nor suggests about determination of the probability of dependency of the entire text, because no texts are extracted to generate an optimum text. Therefore, Abe never discloses an extracting step, a text generation step for generating an optimum text based on the input keyword by using the text extracted by text generation means, and analyzing dependency structure of the text by determining the

probability of dependency of the entire text to generate a text having a maximum probability as an optimum text as recited in the claimed invention.

Since Abe fails to teach each and every limitation of amended independent claims 1 and 7, Applicants respectfully submit that claims 1 and 7 and their dependent claims clearly define over the teachings of Abe. Accordingly, reconsideration and withdrawal of the rejection under 35 U.S.C. § 103 are respectfully requested.

CONCLUSION

Since the remaining patents cited by the Examiner have not been utilized to reject the claims, but merely to show the state of the prior art, no further comments are necessary with respect thereto.

It is believed that a full and complete response has been made to the Office Action, and that as such, the Examiner is respectfully requested to send the application to Issue.

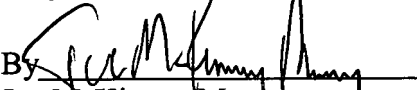
In the event there are any matters remaining in this application, the Examiner is invited to contact Joe McKinney Muncy, Registration No. 32,334 at (703) 205-8000 in the Washington, D.C. area.

Pursuant to 37 C.F.R. §§ 1.17 and 1.136(a), Applicants respectfully petition for a one (1) month extension of time for filing a response in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

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Respectfully submitted,

By 

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